

TO CATEGORIES



**1.400.000** PAGES OF RESEARCH

MONTHLY  
**1.200.000**  
PAGE VIEWS

OVER  
**300.000**  
VISITORS PER MONTH

**new** E-BOOKS 

FULLTEXT SEARCH



NEW: [Advanced Search](#)

## Periodicals:

### MSF

> Materials Science Forum

### KEM

> Key Engineering Materials

### SSP

> Solid State Phenomena

### DDF

> Defect and Diffusion Forum

### AMM

> Applied Mechanics and Materials

### AMR

> Advanced Materials Research

### AST

> Advances in Science and Technology

### JNanoR

> Journal of Nano Research

### JBBTE

### Construction of 7YGS-45 Type Orchard Transport Automatic Control Test Platform

**Journal** [Advanced Materials Research](#) (Volumes 201 - 203)

**Volume** [Advanced Manufacturing Systems](#)

**Edited by** Daoguo Yang, Tianlong Gu, Huaiying Zhou, Jianmin Zeng and Zhengyi Jiang

**Pages** 1396-1401

**DOI** 10.4028/www.scientific.net/AMR.201-203.1396

**Citation** Shan Jun Li et al., 2011, Advanced Materials Research, 201-203, 1396

**Online since** February, 2011

**Authors** [Shan Jun Li](#), [Jun Jun Xing](#), [Yan Lin Zhang](#), [Xue Jie Li](#), [Qi Zhou Fan](#)

**Keywords** [Automatic Control](#), [Duel-Track](#), [Orchard Transport](#), [Self-Propelled](#), [Test Platform](#)

**Abstract** In order to solve the problems during the mountain orchard transportation, the 7YGS-45 type self-propelled duel-track orchard transport was developed. Since the optimization of operating parameters and structure parameters are difficult to be settled at the site of installation, so it's necessary to construct the automatic control test platform. The Platform is mainly consists of rack section, automatic control part and testing part and other components, and can be used to analyze the changing index of wheel pair's structural parameters of the driving mechanism, when under the different situations of loading capacity, pre-load, running-speed, and slope angle; spindle torque and rotating-speed of the driving mechanism; wear rate of driving wheel's groove; and slipping rate of steel wire rope. The platform can also be used to test the overall performance's parameters of other small track transports, and provide test conditions and theoretical analysis basis for optimization of the transport's performance, which absolutely has application values.

**Full Paper**  [Get the full paper by clicking here](#)

### First page example

> Journal of Biomimetics,  
Biomaterials, and Tissue  
Engineering  
JMM  
> Journal of Metastable and  
Nanocrystalline Materials  
JERA  
> International Journal of  
Engineering Research in Africa  
AEF  
> Advanced Engineering Forum  
NH  
> Nano Hybrids

> @scientific.net

## CONFERENCE

> GO!

11/13/2012 - 11/15/2012

The International Conference on Advanced Eng

8/24/2012 - 8/25/2012

AMMT 2012: 2012 International Conference on

8/24/2012 - 8/26/2012

2012 2nd International Conference on Material :

more...

Advanced Materials Research Vols. 201-203 (2011) pp 1396-1401  
Online available since 2011/Feb/21 at [www.scientific.net](http://www.scientific.net)  
© (2011) Trans Tech Publications, Switzerland  
doi:10.4028/www.scientific.net/AMR.201-203.1396

## Construction of 7YGS-45 Type Orchard Transport Automatic Control Test Platform

Shanjun Li<sup>1,a</sup>, Junjun Xing<sup>2,b</sup>, Yanlin Zhang<sup>3,c</sup>, Xuejie Li<sup>1,d</sup>, Qizhou Fan<sup>1,e</sup>

<sup>1</sup>College of Engineering, Huazhong Agricultural University, Wuhan, China

<sup>2</sup>joint first author (contributes equally to the work), College of Engineering, Huazhong Agricultural University, Wuhan, China

<sup>3</sup>Corresponding author, College of Engineering, Huazhong Agricultural University, Wuhan, China

<sup>a</sup>shanjunlee@mail.hzau.edu.cn, <sup>b</sup>xingjunjun12345@webmail.hzau.edu.cn,

<sup>c</sup>zhangyl@mail.hzau.edu.cn, <sup>d</sup>lxj@webmail.hzau.edu.cn, <sup>e</sup>qizhoufan@mail.hzau.edu.cn

**Keywords:** Orchard Transport; Duel-Track; Self-Propelled; Test Platform; Automatic Control

**Abstract:** In order to solve the problems during the mountain orchard transportation, the 7YGS-45 type self-propelled duel-track orchard transport was developed. Since the optimization of operating parameters and structure parameters are difficult to be settled at the site of installation, so it's necessary to construct the automatic control test platform. The Platform is mainly consists of rack section, automatic control part and testing part and other components, and can be used to analyze the changing index of wheel pair's structural parameters of the driving mechanism, when under the different situations of loading capacity, pre-load, running-speed, and slope angle; spindle torque and rotating-speed of the driving mechanism; wear rate of driving wheel's groove; and slipping rate of steel wire rope. The platform can also be used to test the overall performance's parameters of other small track transports, and provide test conditions and theoretical analysis basis for optimization of the transport's performance, which absolutely has application values.

## Introduction

In recent years, in order to meet the labor-saving needs in mountain orchard cultivation, and under the support of modern agricultural technology system, China has developed a variety of transport machines, which mainly include the mountain orchard duel-track soft cable transport system in Yiling District, Yichang City, Hubei Province; the chain type mountain winding and looping goods transport cable system, which was developed in South China Agricultural University; and the 7YGS-45 type self-propelled duel-track orchard transport, which was developed in Huazhong Agricultural University, that is shown in Figure 1. However, it's difficult to test and analyze the performance of various kinds of transports, so the authors target the 7YGS-45 type self-propelled duel-track orchard transport, and installation the automatic control test platform, that is shown in Figure 2. The platform can be appropriately modified, and can be used to test other type of transporting system or transports too[1-4].



Fig.1. The transport equipped with spraying operation



Fig.2. Automatic control test platform

All rights reserved. No part of contents of this paper may be reproduced or transmitted in any form or by any means without the written permission of TTP, [www.ttp.net](http://www.ttp.net). (ID: 122-70-132-10/12/11 03:19:59)